REMARKS

Claims 9-17 are pending. Claim 1-8 have been canceled without prejudice or disclaimer. New claims 9-17 have been added herein.

Support for the new claims may be found in the specification as follows:

Support for new claim 9 may be found in original claim 1 (drawn to a binder), claim 5 (drawn to a binder composition) and claim 6 (drawn to a slurry). Support for the recitation that the polymer comprises 0% to 15% by weight of structural units derived from an ethylenically aliphatic hydrocarbon monomer may be found on page 6, lines 14-22, of the specification.

Support for new claim 10 may be found in original claim 2.

Support for new claim 11 may be found on page 7, lines 1-2.

Support for the recitation of "poly-1,3-butadiene" in new claim 12 may be found in original claim 4, and also on page 4, lines 13 et seq., of the specification.

Support for the recitation in new claim 13 regarding the range of 1,2-vinyl structure content in the polymer may be found on page 3, lines 14-11 from the bottom.

Support for new claim 14 may be found in original claim 3. Support for claim 15 may be found on page 7, lines 16-20.

Support for new claims 16 and 17 may be found in original claims 7 and 8, respectively.

Regarding the Information Disclosure Statement.

The Examiner indicates that the Supplemental European Search Report listed in the Information Disclosure Statement filed on March 1, 2002, "has not been made of record because it

is an unpublished document"; the Examiner has lined through this entry on the PTO-1449 to indicate that it has not been considered.

However, Applicant respectfully submits that there is no requirement that an item of information submitted in an IDS be a published document. Applicant therefore respectfully requests that the form 1449 be initialed to indicate that the Supplemental European Search Report has been considered. Applicant has attached herewith a new form 1449 listing this document, and requests that the Examiner initial this listing.

Claims 1 and 4 are rejected under 35 U.S.C. §102(b) as being anticipated by Zelinski et al. (U.S. Patent 3,050,513). (Office action paragraph no. 3)

The rejection is moot in view of the cancellation of claims 1 and 4 without prejudice or disclaimer. Applicant here comments on the new claims with regard to the cited reference.

New claim 9 is drawn to a slurry for a lithium ion secondary battery, and recites, in particular, "an active material" for an electrode and "a dispersion medium."

The Examiner has stated that Zelinski et al.'s polymer "is **capable** of being used as a binder in a lithium-ion battery" (emphasis added). However, Zelinski et al. does not disclose a dispersion medium or an active material in combination with the disclosed polymer. Applicant submits that, moreover, Zelinski et al. does not suggest the combination of the polymer with either a dispersion agent or an active material, and there is no general suggestion or motivation in Zelinski et al. for the use of the butadiene polymer as a binder for a lithium ion secondary battery.

Applicant therefore submits that new claims 9-17 are neither anticipated by nor obvious from Zelinski.

Claims 1-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 99/12221. As WO'221 was published in Japanese, U.S. Patent 6,200,707 to Takada et al. is taken as an English equivalent thereof. (Office action paragraph no. 5)

The rejection is moot in view of the cancellation of claims 1-8 without prejudice or disclaimer. Applicant here comments on the new claims with regard to the cited reference.

Takada et al. teaches a molded solid electrolyte and molded electrode, which are made using a hydrogenated block copolymer as a binder. The hydrogenated block copolymer is made by **hydrogenating** a straight chain or branched block copolymer containing a block (A) comprising polybutadiene having 1,2-vinyl bond content of 15% or less and a block copolymer (B) comprising a butadiene (co)polymer consisting of 50-100% by weight of butadiene and 0-50% by weight of other monomers, in which the butadiene portion has a 1,2-vinyl content of 20-90%, wherein (A)/(B)= (5-70)/(95-30)% by weight (Takada '707, Abstract).

Applicant submits that there is a fundamental difference between the polymer binder of Takada and that used in the present invention. Takada discloses a 1,2-vinyl bond content of block (A) and a 1,2-vinyl content of block (B) of a block copolymer, but the binder used for the molded electrode in Takada is a **hydrogenated** block copolymer obtained by hydrogenating 90% or more of the block copolymer having the specific 1,2-vinyl bond content (Takada '707, column 4, lines 51-55). Applicant notes that the block (A) portion of the unhydrogenated block copolymer has been

converted by hydrogenation to a block with a crystalline **polyethylene-like structure**, and the block (B) portion of the unhydrogenated block copolymer has been converted by hydrogenation to a rubber-like block with **olefin skeleton** (Takada '707, column 4, lines 63-67).

Due to the hydrogenation, the 1,2-vinyl bonds in the unhydrogenated block copolymer in Takada substantially disappear. The hydrogenated block copolymer disclosed in Takada does not generally satisfy the limitation on the 1,2-vinyl structure content in new claim 9 (i.e., 2 to 25% by mole); only when the degree of hydrogenation in Takada is at or near the lowest value (90%), it is possible that the hydrogenated block copolymer of Takada satisfies this 1,2-vinyl structure content requirement.

Moreover, new claim 9 recites the limitation "comprising 0% to 15% by weight, based on the weight of the total structural units of the polymer, of structural units derived from an ethylenically aliphatic hydrocarbon monomer." The hydrogenated block copolymer of Takada has a crystalline polyethylene-like structure formed by hydrogenation of the block (A) and a rubber-like block with olefin structure formed from the block (B) (Takada '707, column 4, lines 64-67). The hydrogenation degree in Takada is 90% or more and thus the content of "crystalline polyethylene-like structure" plus "rubber-like block with olefin structure" in the hydrogenated block copolymer of Takada is at least about 90%. In contrast, the polymer binder used in the present invention may contain, as optional co-monomer units, structural units derived from an ethylenically aliphatic hydrocarbon monomer such as ethylene, other than 1,3-butadiene, but claim 9 recites that the amount of such aliphatic hydrocarbon monomer units in the polymer binder is not larger than 15% by weight.

In addition, new claim 11 recites that the copolymer is a "random copolymer." Takada's

polymer is a hydrogenated block copolymer.

Finally, Takada suggests nothing about the use of the unhydrogenated block copolymer having the specific 1,2-vinyl bond content (which is an intermediate for the production of the hydrogenated block copolymer used for a molded electrode) as a slurry comprising the unhydrogenated block copolymer in combination with an active material for electrode and a dispersion medium.

Applicants therefore submit that new claims 9-17 are neither anticipated by nor obvious over WO '221.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP

Daniel A. Geselowitz, Ph.D.
Agent for Applicants
Reg. No. 42,573

DAG/plb
Atty. Docket No. **020280**
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930

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Information Disclosure Statement

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